



Healthcare Analytics in Navy Medicine

Perspectives and Methods for Decision-Making

FOCUS ON EMERGENCY DEPARTMENT USE

Understanding the Growing Use of Emergency Departments for Non-Urgent Health Conditions

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In the U.S. the use of emergency departments (ED) has increased substantially over the last decade, and increases in ED use have been largely driven by patients with private or other health insurance.¹ This increase has also been observed in the Military Health System (MHS), which saw a 26 percent growth in the number of ED visits from 2004 to 2011, largely driven by increased visits to civilian EDs for non-urgent health conditions.² An increased reliance on ED care means patients lack continuity in their care and use costlier services if their care could have been more appropriately provided in a less costly setting. This article explores potential reasons for this growing utilization of EDs and possible strategies for reducing non-urgent ED visits.

Emergency departments (ED) play a critical role in any healthcare system, including the MHS. Their traditional mission has been to provide trauma and emergency healthcare services for those patients that are in immediate danger of dying or suffering permanent damage to their health. In more recent years, the role of EDs in many communities has also evolved as a focal point for emergency preparedness efforts related to natural disasters and mass-casualty events, as well as public health emergencies related to communicable disease outbreaks. Moreover, the 1996 federal Emergency Medical Treatment and Labor Act (EMTALA), which requires hospitals to provide emergency screening and stabilization treatment to a presenting patient regardless of their ability to pay for healthcare, places many EDs in the role of provider of last resort to patients who are unable to pay for healthcare from other providers within the community. EDs are also most often the only ambulatory medical facilities within a community that remain open seven days a week, 24 hours a day. These combined factors have resulted in many hospital EDs becoming a

major source of ambulatory healthcare for conditions that are considered minor and non-life threatening, or “non-urgent”.

Emergency Department Use

The average U.S. rate of ED visits is 428 ED visits per 1,000 persons, but this rate varies significantly by primary payer source.^{3,4} Among privately-insured populations, the ER visit rate is around 200-250 visits per 1,000 population; for Medicaid beneficiaries the ED visit rate is around 500-550 visits per 1,000 population. In comparison, the ED visit rate in fiscal year 2011 among MHS beneficiaries younger than 65 was approximately 480 visits per 1,000 population (about 3 million total ED visits), but the rate rose to approximately 520 visits per 1,000 population when only MTF Prime enrollees were evaluated.² However, when compared to other forms of ambulatory care use (e.g., physician office visits and outpatient surgeries), ED visits are relatively rare events, accounting for only about 10 percent of all ambulatory care visits to medical providers nationwide.¹ Moreover, the growth in ED visits over the past decade has been slightly lower than the increase in physician office visits, suggesting a more general increase in the demand for ambulatory care.¹

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1 National Center for Health Statistics (2011). *National Hospital Ambulatory Medical Care Survey*, Hyattsville, Md.

2 Russo, CA (2012, June). Emergency room utilization in Navy Medicine and the MHS. Presented at the Navy Medicine Audit Readiness Training Symposium, Lansdowne, VA.

3 National Center for Health Statistics (2013). *National Hospital Ambulatory Medical Care Survey: 2010 Emergency Department Summary Tables*, Hyattsville, Md.

4 Tang N, Stein J, Hsia RY (2010). Trends and characteristics of US emergency department visits, 1997-2007. *JAMA*. 304(6):664-670.



There is also a common misperception that increases in emergency department use is primarily driven by populations without a usual source of primary care. While privately insured patients have a lower rate of ED use than uninsured patients, the recent growth in volume of ED use is driven by individuals with private insurance, higher income, and private physicians as their usual source of care.⁵ A potential key driver in the use of EDs by privately insured patients is an increase in “non-urgent” visits (i.e., visits where care can be delayed for several hours without impacting the risk of adverse outcomes). Estimates for non-urgent use of emergency departments vary considerably depending on the method used to classify urgent versus non-urgent, but the median estimate is around 32 percent of all ED visits (see the Skills and Methods section for additional details on classification methods).⁶

Potential Drivers of Non-Urgent ED Use among Well-Insured Patients

Surveys of patients who use the ED for non-urgent health problems find that nearly two-thirds report a regular source of medical care at a physician’s office.⁷ In addition, patients who use the ED for non-urgent health problems reported greater use of physicians in other ambulatory care settings over a one-year period, strongly suggesting that use of emergency departments for non-urgent conditions does not reflect lack of access to other primary care providers for most patients.

While urgency from the patient’s perspective, which may differ from the classification of “non-urgent” by a provider or researcher after a triage decision or diagnosis is made, certainly contributes to non-urgent ED use, constraints of regular sources of primary care may also strongly drive non-urgent ED use. Increased demand for all ambulatory care services, including physician office visits, among well-insured patients may be constrained by physician panel sizes, average appointment waiting times, and hours of operation. This excess demand, coupled with a desire for convenience and ease of access by patients, may drive insured patients to seek care in emergency departments even when they know a specific

health problem can be treated by their usual source of primary care. Emergency departments are conveniently open seven days a week, 24 hours a day, and a patient can walk in for treatment at their own convenience. Moreover, many community hospitals have increased the capacity of their EDs so that long ED waiting times, once a common detractor, are often avoided, making EDs an even more desirable source of non-urgent care. The convenience consideration is especially important among patients who are unable or unwilling to take time off from work or significant caregiving duties during daytime hours for medical appointments.

Co-payments and cost-sharing may also drive non-urgent ED use, especially among some MHS beneficiaries who have little to no financial liability for ED visits depending on their TRICARE plan and/or use of an MTF emergency department. TRICARE Prime enrollees who are active duty or active duty family members incur no out-of-pocket costs for emergency room visits to a civilian ED, while all others with TRICARE Prime pay \$30 per visit. Conversely, beneficiaries not enrolled in TRICARE Prime may incur costs equal to 15-25 percent of negotiated and/or allowed amounts, depending on specific plan coverage and use of a network civilian provider. Partly due to this variability in patient financial liability, it is not surprising to see high variability in ED visit rates among specific TRICARE beneficiary populations, with the highest ED utilization rates occurring among active duty family members enrolled to TRICARE Prime.² While greater cost-sharing is associated with reduced utilization of the ED, especially for non-urgent health conditions, the impact of higher cost-shares is much greater in low-income patients, who are also at higher risk for high-severity diagnoses. In other words, simply increasing cost-shares may have the unintended consequence of delaying emergency care among those patients at highest risk for high-severity diagnoses.

Strategies for Reducing Non-Urgent ED Use

Reducing the non-urgent use of EDs among patients with a usual source of primary care potentially increases the quality and appropriateness of care delivered, improves care continuity and coordination, and avoids costs if the care can be provided in a more appropriate and less expensive setting. Possible strategies for targeting the reduction of these non-urgent visits include:

- Broadening access to primary care services through patient-centered medical homes and alternative

5 DeLia D and Cantor J (2009). Emergency department utilization and capacity: research synthesis report no. 17, Robert Wood Johnson Foundation, Princeton, N.J.

6 Durand AC, Gentile S, Devictor B, et al. (2011). ED patients: how non-urgent are they? Systematic review of the emergency medicine literature. *Am J Emerg Med*. 29:333-345.

7 Cunningham, P, Clancy CM, and et al. (1995). The use of hospital emergency departments for nonurgent health problems: a national perspective. *Med Care Res Rev* 52(4): 453-474.



primary care sites (e.g., urgent care centers or retail-based health clinics) with extended clinic hours during the weekends and evenings, established walk-in hours, same-day appointments, and 24/7 nurse advice lines. These extended services allow convenient and timely access to primary care settings that are less costly than EDs, and the use of nurse advice lines serves to educate patients about the availability of appropriate care settings and actions for non-urgent health conditions.

- Targeting the focus of utilization management on high utilizers of ED care. Most often the small percentage of beneficiaries with multiple and repeated ED visits account for a significant portion of total ED use. Enrolling these patients in patient-centered medical homes or care management programs can facilitate individualized care plans, health coaching, and connecting patients with appropriate community resources. The Centers for Medicare and Medicaid Services (CMS) recently issued guidance and policies on best practices for high utilizer programs, some of which target ED use (<http://medicaid.gov/Federal-Policy-Guidance/Downloads/CIB-07-24-2013.pdf>).
- Combining increased patient copays for visits to emergency departments with educational outreach programs and lower patient financial liability that encourage the use of a usual source of primary care for non-urgent conditions or alternative treatment sites (e.g., urgent care centers and retail-based health clinics) when a usual source is not reasonably available.
- Among EDs located within military treatment facilities, implementing intake processes that allow a patient presenting with non-urgent symptoms to immediately schedule next-day or same-day appointments and/or have walk-in access to the primary care clinic or their primary care team.

Conclusions

The rise in ED use and the extra costs associated with this growth may be curbed if some portion of the large percentage of visits for non-urgent conditions are redirected to more appropriate primary care settings. While it is difficult to know if this cost savings will be substantial or modest for specific MHS populations, there are certainly gains to be made for the quality of care as primary care becomes less fragmented and better coordinated.

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SKILLS AND METHODS

—IDENTIFYING NON-URGENT ED USE:

A CAUTIONARY TALE

The following article describes how non-urgent emergency department (ED) use is typically identified in emergency care analyses, the limitations of each method, and how the use of a specific method might impact total estimates.

There is no standard definition of a non-urgent emergency department (ED) visit, and estimates of the number of annual non-urgent ED visits vary and are dependent on the nature of categorization. A systematic review of research evaluating non-urgent ED use found the most commonly used definition of a non-urgent ED visit depends on the criteria of whether or not care can be delayed for several hours without increasing the likelihood of an adverse outcome. It is estimated that approximately 30 percent of ED visits in the U.S. meet this definition of “non-urgent”.⁸ However, differences in classifying the urgency of care can significantly impact these estimates. Classification based on retrospective assessments of explicit criteria (e.g., the principal ED diagnosis during an encounter or resource utilization) tend to result in a higher proportion of non-urgent ED visits, whereas classifications based on triage acuity or presenting complaint tends to predict a lower proportion of non-urgent visits. Discussed below are three commonly-used methods for classifying emergency care as urgent or non-urgent.

Diagnosis-Based Classifications

Retrospective classification based on diagnosis codes reflects the probability of a patient’s underlying reason for the visit being urgent or non-urgent. This type of system is best exemplified by the algorithm developed at New York University, called the NYU Emergency Department Algorithm (NYU EDA), which was designed to identify whether a particular ED visit was urgent, as well as those that could have been provided in a primary care setting or emergencies that are likely to have been

8 Durand AC, Gentile S, Devictor B, et al. ED patients: how nonurgent are they? Systematic review of the emergency medicine literature. *Am J Emerg Med.* 2011;29:333-345.



avoided if primary care had been delivered earlier.⁹ The NYU EDA was developed in the late 1990s with the advice of an expert panel of emergency department physicians who reviewed full medical charts. It is specifically intended to aid in the analysis of administrative data sets. Since detailed medical records are not available for most analyses, the algorithm classifies EDR visits according to discharge diagnosis (i.e., the ICD-9-CM diagnosis code) which is routinely available to researchers in hospital billing records or payer claims. The EDA includes the following four categories that address ED visits: “non-emergent”, “emergent/primary care treatable”, “emergent/ED care required but preventable”, and “emergent/ED care required but not preventable”.

In creating the algorithm, each case was first classified as “emergent” (defined as needing care in less than 12 hours) or “non-emergent”. Then, each “emergent” case was classified as to whether the procedures performed and resources used were typically available in a primary care setting, hence “emergent, primary care-treatable” or “emergent, ED care required”. The chief complaints in the sample were then mapped to principal diagnosis at emergency department discharge based on ICD-9-CM diagnosis codes, and the algorithm was constructed to generate a probability that a particular discharge diagnosis results from a non-emergent or non-urgent visit. Finally, all “emergent, ED required” cases were classified as to whether the emergency was potentially preventable or avoidable with timely and effective outpatient care (i.e., the principal diagnosis was an ambulatory care sensitive condition).

Many of the frequently used diagnosis-based methodologies to classify ED visits are based on the NYU EDA, and it has been adapted by several researchers to create varying levels of urgent and non-urgent categorization of emergency department use. It has also been adapted for use by the Centers for Disease Control to describe the characteristics of high safety-net burden emergency departments, has been validated as accurate in predicting future hospitalizations and mortality, and has been used by several states and municipalities to track ED visit patterns.

Despite the fact that it is currently the only validated tool for evaluating the severity of an ED visit and has been widely adopted as a method for categorizing non-urgent

emergency department use, the algorithm code set has not been updated since 2003. Moreover, it is also important to note that the algorithm is not intended as a triage tool or a mechanism to determine whether ED use in a specific case is “appropriate” (e.g., for reimbursement purposes). Concerns about the potential misclassification of ED visits as “inappropriate” and overestimation of “non-emergent” cases primarily relates to its use of primary diagnosis (the diagnosis made at discharge after examination) for categorization, rather than presenting symptoms that initiated the ED visit. The availability of primary diagnosis over presenting symptoms is an inherent limitation of administrative data; however, this reliance on primary diagnosis may cause inaccurate classification, as seeking care for alarming symptoms (i.e., chest pain) may be a completely appropriate use of emergency care but may often result in diagnoses that are not, with hindsight, considered emergencies (i.e., heart burn).

Procedure-Based Classifications

Procedure-based classification systems look primarily at what occurs during the episode of care, such as whether patients received imaging tests or were admitted to the hospital. This method was originally developed to evaluate visits as urgent or non-urgent based on procedures and utilization that occur during and after the visit, as well as the patient-reported reason for the visit.¹⁰ This method classified visits as “urgent” if they resulted in a hospitalization, occurred within 3 days of an injury or accident, included any surgical procedures, involved a physician’s referral, involved an ambulance, or were associated with a self-reported “very serious” condition. The method was later modified to include additional criteria, including the use of imaging.¹¹ All other visits were considered non-urgent. Using this procedure-based method, about 60 percent of ED visits were classified as urgent.^{3,4} This method, however, does not consider whether or not the procedures noted during the ED visit were used appropriately.

Prospective Triage-Based Classifications

Prospective, triage-based classification is part of the medical record, not administrative data; subjectively reflects degree of urgency as noted by the provider initially assessing the patient; and is done before definitive diagnoses are

9 NYU Wagner. NYU ed algorithm: background. Wagner website. Available at: <http://wagner.nyu.edu/faculty/billings/nyued-background>. Accessed January 24, 2014.

10 Cunningham PJ, Clancy CM, et al. (1995). The use of hospital emergency departments for nonurgent health problems: a national perspective. *Med Care Res Rev* 52(4): 453-474.

11 Sarver JH, Cydulka RK, et al. (2002). Usual source of care and nonurgent emergency department use. *Acad Emerg Med* 9(9): 916-923.



made. Yet, a number of studies have shown that the reliability of ED triage acuity systems varies widely among individual hospitals, which can increase the variability of estimates of urgent/non-urgent use when triage-based classifications are used.

In mapping triage categories to urgent/non-urgent classifications, some methods mirror that used by the CDC's National Hospital Ambulatory Medical Care Survey (NHAMCS), relying on the triage categories reported by individual hospitals, which are then recoded to either: immediate, emergent, urgent, semi-urgent, and non-urgent (i.e., should be seen in 121 minutes to 24 hours). Other methods use the Emergency Severity Index (ESI), a validated, flowchart-based triage system developed for use by emergency department nurses and physicians, to classify ED visits by sorting patients into five categories based on patient acuity, expected resource intensity, and timeliness.¹²

Using NHAMCS data from 2006-2009, one recent national study used a triage classification method involving a five-level acuity score to analyze the interventions and ancillary testing ED patients required.¹³ In this case, "level 5" defined a non-urgent case in which a delay of up to 24 hours would make no appreciable difference to the clinical condition and subsequent referral made to the appropriate alternative specialty. This study found that 10.1 percent of annual ED visits in the U.S. were triaged as non-urgent, yet these patients had a high rate of ancillary testing and interventions. These findings suggest that healthcare services are needed even for the lowest acuity visit and further demonstrate the difficulty in defining urgency.

12 Wuerz RC, Milne LW, et al. (2000). Reliability and validity of a new five-level triage instrument. *Acad Emerg Med* 7(3): 236-242.

13 Honigman LS, Wiler JL, et al. (2013). National study of non-urgent emergency department visits and associated resource utilization. *West J Emerg Med* 14(6):609-616.

DATA AND INFORMATION SYSTEMS

— IDENTIFYING AND COUNTING ED RECORDS

Often, analysts are asked to provide an analysis of emergency care utilization. This article will describe how to identify ED records in direct care and purchased care data files and how to count ED visits identified in these files. Other topics related to ED utilization, including identifying care provided in urgent care facilities and specific M2 corporate reports available to measure ED utilization, will also be discussed.

Identifying ED Records

In direct care, ED records are located in the Professional Encounters file (CAPER). To identify an ED record, condition on MEPRS3 Code "BIA" (indicates care provided in the ED) and E&M Code 1, E&M Code 2 or E&M Code 3 (Evaluation & Management code data fields) ranging from "99281-99285". In purchased care, ED records can be found in the Purchased Care Non-Institutional claims data file (TED-N). In the claims data, ED records are identified by "Place of Serv" equal to "23" (ED) and Procedure Code ranging from "99281-99285". The MEPRS code and Place of Service code describe the location where care was provided, while the E&M CPT codes describe the level of complexity required for the ED encounter (Table 1).

Counting ED Visits

Identifying ED records is just half the battle, as a record is not an ED encounter in the TED-N data file. Conversely, a CAPER record is a healthcare encounter between a patient and one or more MTF caregivers in a specific clinic (e.g., the ED). In purchased care, specifically in the TED-N, a record is a line item (by CPT/HCPCS code) within a claim for any healthcare service or product provided by any one provider to a patient; therefore, each procedure that was performed by a

Table 1. Description of E&M codes used to identify ED records

Evaluation & Management (E&M) Codes	Description
99281	Emergency Department E/M code, straight forward
99282	Emergency Department E/M code, low complexity
99283	Emergency Department E/M code, moderate complexity
99284	Emergency Department E/M code, moderate complexity
99285	Emergency Department E/M code, high complexity



provider is presented in a separate line item, and the “Number of Visits” field simply equals the number of billed procedures (i.e., the number of line items). To further complicate matters, ED visits in purchased care usually generate at least one facility claim (i.e., a claim from the hospital emergency department that is designated by Provider Specialty = 99), as well as at least one professional service claim from the provider who treated the patient. While only the professional service claims have relative work units (RVUs), both records have dollar amount(s) paid and billed, as well as “Number of Visits” greater than or equal=“1”. Thus, if a patient visits a civilian ED, there will be a minimum of two TED-N records for that single ED encounter: one from the facility (e.g., hospital emergency department) and one from each provider who saw the patient, totaling to “Number of Visits” greater than or equal to two. If the “Number of Visits” field is used to count ED visits, then ED visits will be greatly overestimated. To count purchased care ED visits, the best practice is to count one visit per person per day. Moreover, beware of just counting professional service claims or facility claims when evaluating ED utilization, as the number of each claim type submitted per ED Visit varies, and in some cases, can be missing (i.e., only a professional service claim is present or only a facility claim is present for a specific purchased care ED encounter).

Urgent Care

While identifying and measuring purchased care ED visits to an ED facility is not easy, it is feasible. Unfortunately, identifying emergency visits in the claims data to stand-alone urgent care facilities is not reliable. In the TED-N, visits to urgent care facilities are most often coded under “Place of Serv” equal to “11” (Office) instead of “Place of Serv” equal to “20” (Urgent Care). Urgent care facilities most often identify as office visits because there is no higher payment provided when coded as “20” (Urgent Care). Beware that changes in coding practices by urgent care facilities in some regions have resulted in more claims being coded with the “Place of Serv” equal to “20”. Therefore, any observed increasing trend in claims from urgent care facilities could just be attributed to more accurate coding, not increased utilization.

M2 Corporate Report with ED Visit Data

As counting ED visits or measuring ED workload can be difficult in M2, there is a corporate report that has been published in Infoview under “Public Folders/M2/TMA-HA/Case Management-Medical Management”. The “Medical

Management Heavy ER Users” report shows all ED visits (per person and service date) for direct care and purchased care combined and sorted to show the individuals with the highest number of encounters. This report is useful in obtaining all ED users in a specified MTF service area, as well as individuals who are high utilizers of the ED.

NEW KNOWLEDGE

— SOURCES FOR COMPARATIVE ED DATA

The following section notes public sources of data for emergency department (ED) utilization and costs in the civilian sector. These sources can be used to compare ED utilization and trends in the MHS with U.S. national estimates.

The Medical Panel Survey (MEPS)

The Medical Expenditure Panel Survey (MEPS), conducted by the Agency for Healthcare Research and Quality (AHRQ), is a set of large-scale surveys of families and individuals, their medical providers, and employers across the U.S. that collects data on the use of specific health services and their frequency of use, cost, and how they are paid for, as well as data on the cost, scope, and breadth of health insurance held by and available to U.S. workers. Using MEPS, hospital care information is collected for each type of hospital setting (emergency room, inpatient, and outpatient department). ED visits/use/events include any visit made during the person’s reference period to a hospital ED. MEPS collects information on the health conditions requiring ED care, medical services provided, any surgical procedures performed, prescribed medicines, and the physicians and surgeons providing ED room care. ED visit data are available in both event- and person-level analytic files, summary data tables, and statistical brief publications produced using collected MEPS data. Analysts can also use the publically-available MEPSnet/HC query tool to generate their own estimates for ED visits and expenditures.

Additional details on the ED data available through MEPS can be found at http://meps.ahrq.gov/mepsweb/data_stats/MEPS_topics.jsp?topicid=23Z-1.

The National Hospital Ambulatory Medical Care Survey (NHAMCS)

The National Hospital Ambulatory Medical Care Survey (NHAMCS), conducted by the Centers for Disease Control and Prevention’s (CDC) National Center for Health Statistics



(NCHS), is designed to collect data on the utilization and provision of ambulatory care services in hospital emergency and outpatient departments and in ambulatory surgery centers. For the hospital component, findings are based on a national sample of visits to emergency and outpatient departments and to ambulatory surgery facilities in non-institutional general and short-stay hospitals.

Data on ED visits are available through NHAMCS public-use data files, summary tables, and statistical reports. Summary statistical information on ED visits can be found on the “FastStats” page at <http://www.cdc.gov/nchs/fastats/emergency-department.htm>. Reports using data from NHAMCS and specific to ED visits can also be found at http://www.cdc.gov/nchs/ahcd/ahcd_reports.htm.

The Nationwide Emergency Department Sample (NEDS)

The Healthcare Cost and Utilization Project (HCUP) is a family of databases and related software tools and products developed through a Federal-State-Industry partnership and sponsored by AHRQ. Based on voluntary agreements with 44 states, AHRQ receives all acute care inpatient, emergency department, and ambulatory surgery records data, totaling about 95 percent of all inpatient records and 65 percent of all emergency department records in the U.S. HCUP data include all patients regardless of payer (e.g., Medicare, Medicaid, private insurance, and the uninsured), and it can be used to produce national and regional information.

The Nationwide Emergency Department Sample (NEDS), one of the HCUP databases, captures information specific to ED visits that do and do not result in an admission to the same hospital. NEDS enables analyses of ED utilization patterns and supports public health professionals, administrators, policymakers, and clinicians in their decision-making regarding this critical source of care. The NEDS dataset can be purchased for analysis; however, HCUP’s free, online query system HCUPnet (<http://hcupnet.ahrq.gov/>) also enables limited analysis of the NEDS at the national and state levels. Reports using NEDS data and containing summary statistics specific to ED visits can also be found at <http://www.hcup-us.ahrq.gov/reports/statbriefs/sbtopic.jsp>.

TIPS AND TRICKS

— MERGING IN WEBI-RC

Analysts in the MHS are often asked questions regarding the total (Direct Care and Purchased Care) ED utilization for their enrollees or MTF Service Area. To obtain total ED utilization and cost, data must be compiled from two separate MHS Mart (M2) data classes: CAPER (Professional Encounters Detail) and TED-NI (Non-Institutional Detail). Business Objects allows users to merge, or link, data elements from different data sources (i.e., subclasses) and create reports that incorporate data from each source into a single report and/or table. This section will focus on merging the TED-NI class with the CAPER class in M2 to obtain total annual ED costs for a specific MTF service area.

*Illustrated example begins on
the following page*



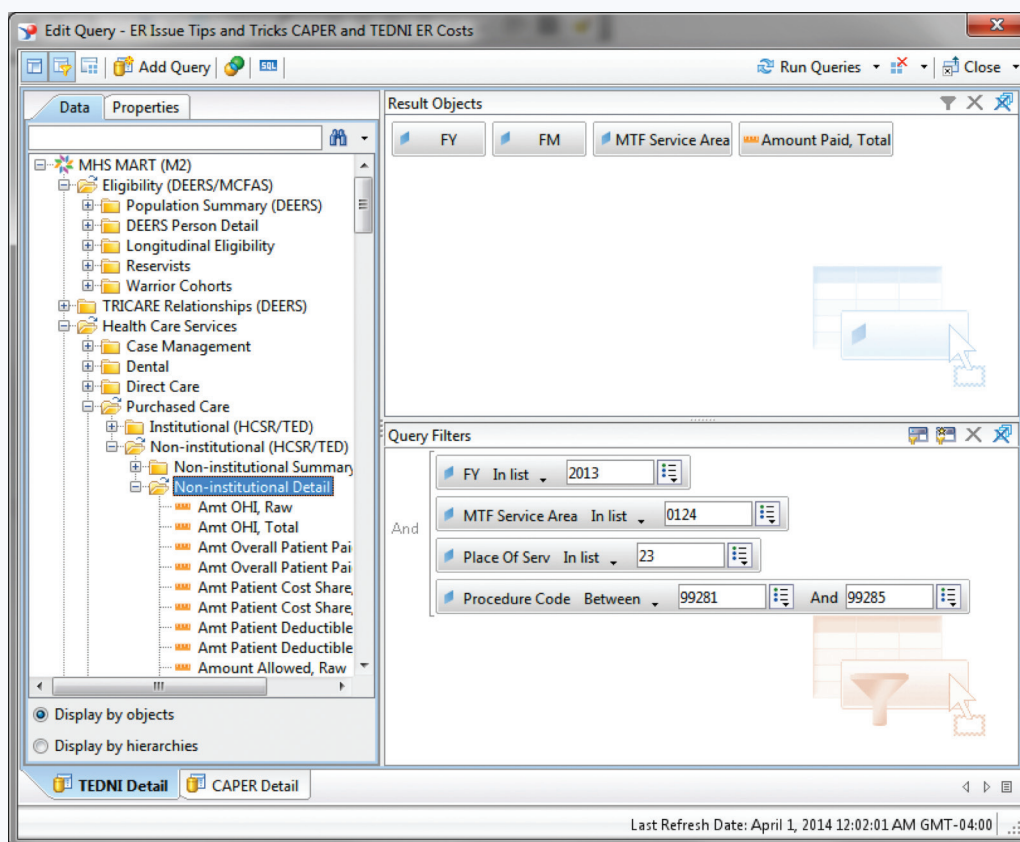
TOTAL ED COSTS - EXAMPLE

Illustration/Exercise:

The following example presents the steps necessary to use the merging technique in Business Objects WebI-RC to examine direct and purchased care ED costs (i.e., total ED costs) in a specified MTF service area (e.g. 0124, Portsmouth). (Note: To build this report in WebI-RC, make sure preferences are correctly set in Infoview). As the inquiry is regarding ED costs and not visits, all ED records for each data source (CAPER and TED-NI) will be aggregated and summed. Use the following steps to build the query:

- 1) In Infoview, launch WebI-RC by selecting “Document List -> New -> Web Intelligence Document”. Select the “MHS Mart Universe”.
- 2) Construct and run a query (Figure 1) against the “Non-Institutional Detail” file under “Healthcare Services/ Purchased Care/Non-Institutional” and include the following result objects and query filters:
 - a. Result Objects: “FY”; “FM”; “MTF Service Area”; and “Amount Paid, Total”
 - b. Query Filters: “FY in list 2013”; “MTF Service Area in list 0124”; “Place of Serv in list 23”; and “Procedure Code between 99281 and 99285”.

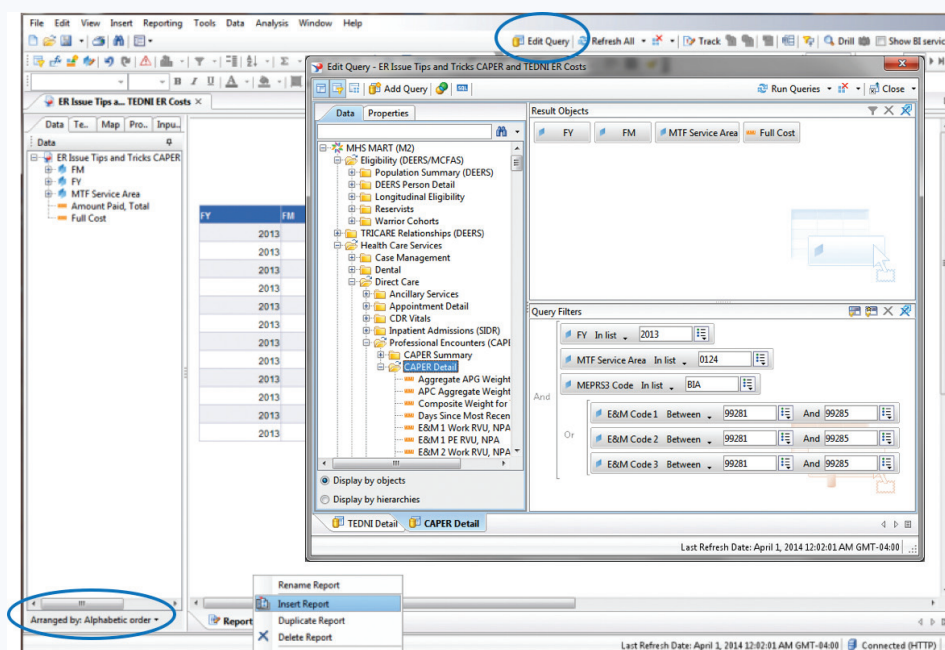
Figure 1. TED-NI Detail query panel



TOTAL ED COSTS - EXAMPLE

- 3) Right click on the “Report 1” tab, select “Insert Report”, and then click “Add Query” in the “Edit Query” window (Figure 2). Next, select “Universe -> MHS Mart”. (Note: You can double-click on the “Query 1” and “Query 2” tabs to rename them to “TEDNI Detail” and “CAPER Detail”).

Figure 2. Adding a second query from the CAPER Detail



- 4) Construct and run a query (Figure 2) from the “CAPER Detail” under “Healthcare Services/Direct Care/ Professional Encounters” and include the following results objects and query filters:
 - a. Results Objects: “FY”; “FM”; “MTF Service Area”; “Full Cost”
 - b. Query Filters: “FY in list 2013”; “MTF Service Area in list 0124”; “MEPRS3 Code in list BIA”; and “E&M Code1 or E&M Code2 or E&M Code 3 is between 99281 and 99285”
- 5) After both queries have run, notice that all the variables from the TED-NI Detail and CAPER Detail queries appear alphabetically in the left panel (Figure 2). At the bottom of the panel, the variables appear in “Alphabetic Order”. Instead, choose arrange by “Query”.
- 6) Right click on “Report 2” tab and select “Insert Report”. Then, click on the “Merge Dimensions” icon and link/merge the alike dimensions (Figure 3): “FY”, “FM”, “MTF Service Area”. Notice that the merged variables have been grouped into a “Merged Dimensions” folders in the left panel of the report (Figure 4).



TOTAL ED COSTS - EXAMPLE

Figure 3. Merge dimensions screen

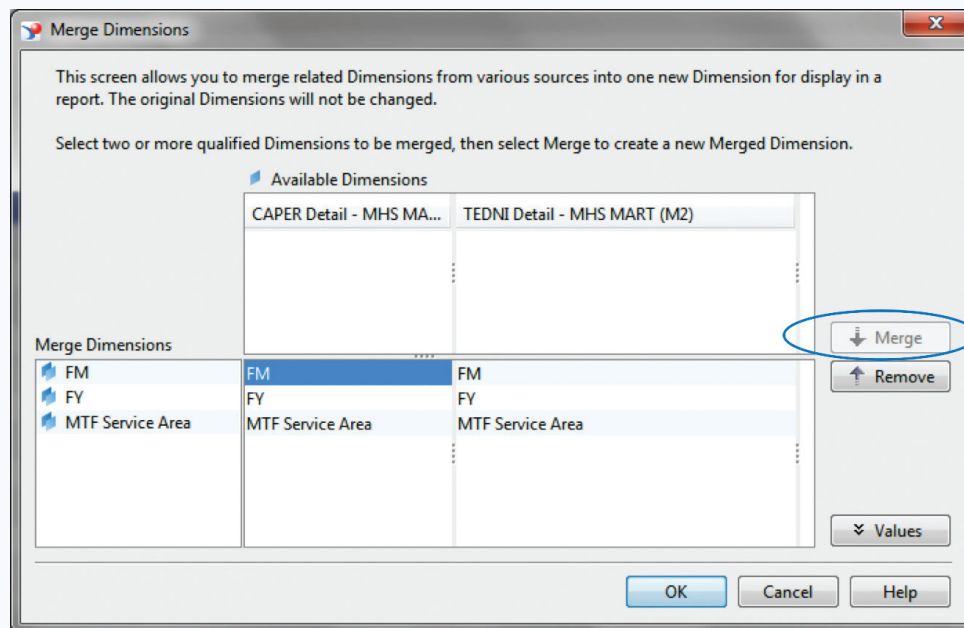
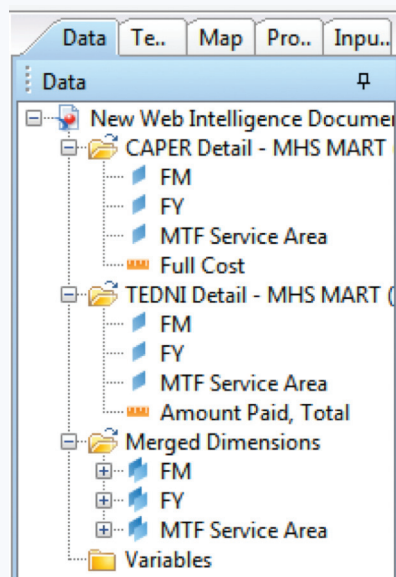


Figure 4. Merged dimensions

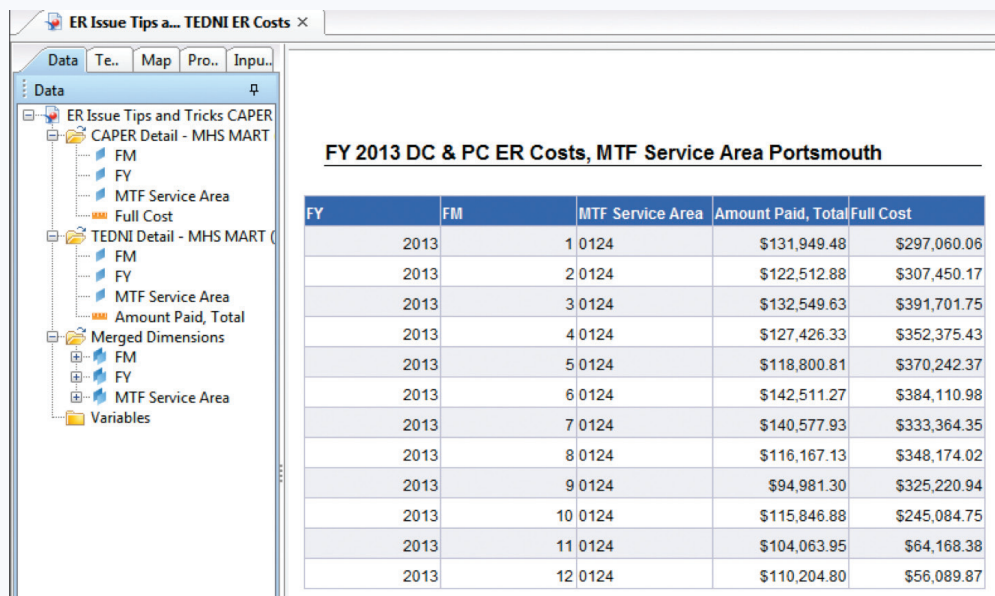


- 7) Drag over the following merged dimensions into your new report: “FY”, “FM”, “MTF Service Area”, as well as “Full Cost” from the CAPER Detail query and “Amount Paid, Total” from the TED-NI Detail query (Figure 5).



TOTAL ED COSTS - EXAMPLE

Figure 5: Report with direct care and purchased care ED costs



Note: Data that have been derived by merging two or more data sources, or subclasses, must be reported at the level of the merged dimensions. In other words, the measures (e.g., costs) cannot be aggregated by a dimension that does not appear in both subclasses. The above example portrays ED costs by FY, FM, and MTF service area – all dimensions that are present in both the CAPER Detail and TED-NI Detail. Furthermore, merging does not work on local variables. For example, if the above data were requested by a created local variable such as fiscal quarters (FQ), then the data sources must be first merged by FY, FM, and MTF service area, as was performed in the above example. Then, a local variable “FQ” could be derived by grouping fiscal months. The reverse would not work (i.e., creating a local “FQ” variable for TEDNI Detail and for the CAPER Detail, and then, using the merging function to merge them). To obtain more detailed information on merging in WebI-RC, refer to the “WISDOM” folder in the Infoview public folders under “Courses/WISDOM/Business Objects/Day 3/Business Objects Part 3 PowerPoint”.



KNOWLEDGE SOURCES

— HEALTH BLOGS

This section highlights health blogs from a reputable media outlet and a research organization that present analyses of research and news in the industry, providing professionals with an additional resource for knowledge development.

Kaiser Health News (KHN) Blog

Capsules, the Kaiser Health News (KHN) blog, features daily summaries of national healthcare news along with a broad range of original perspectives from contributing writers, outside commentary, and other timely, interactive features. KHN's Capsules blog also provides "bite-sized" news that complements KHN's main coverage of healthcare policy and politics. The blog is divided into several categories (e.g., Aging, Delivery of Care, Health Costs, Health Disparities, Health IT, Insurance, Mental Health, Health Reform etc.), which allow the reader to easily locate his or her area(s) of interest and link to other relevant sources.

KHN is a nonprofit news organization committed to providing high-quality, in-depth coverage of health policy issues and developments at the federal and state levels, as well as trends in the delivery of healthcare and in the marketplace. KHN's Capsules blog can be accessed at <http://capsules.kaiserhealthnews.org/>.

The Commonwealth Fund Blog

The Commonwealth Fund Blog offers analysis and insight on expanding health insurance coverage, improving healthcare access and quality, learning from examples of high-performance healthcare, and more. The Commonwealth Fund carries out independent research on healthcare issues and makes grants to improve healthcare practice and policy. Their blog provides insight and discussion on these research findings and other timely topics, such as healthcare coverage, health system performance and cost, healthcare delivery, state health policy, Medicaid, and Medicare.

The Commonwealth Fund is a private foundation that aims to promote a high performing healthcare system that achieves better access, improved quality, and greater efficiency, particularly for society's most vulnerable, including low-income people, the uninsured, minority Americans, young children, and elderly adults. The Commonwealth Fund Blog can be accessed at <http://www.commonwealthfund.org/publications/blog>.

IN THE NEXT ISSUE

The next issue of *Healthcare Analytics in Navy Medicine* will focus on prevention by defining preventative care and activities, providing a background on preventive spending in the U.S., and discussing applications of prevention to the MHS. Two methods of evaluating prevention — cost-effectiveness analysis and return on investment analysis - will also be explained. Data and tools available to monitor key components of prevention activities will also be identified.

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